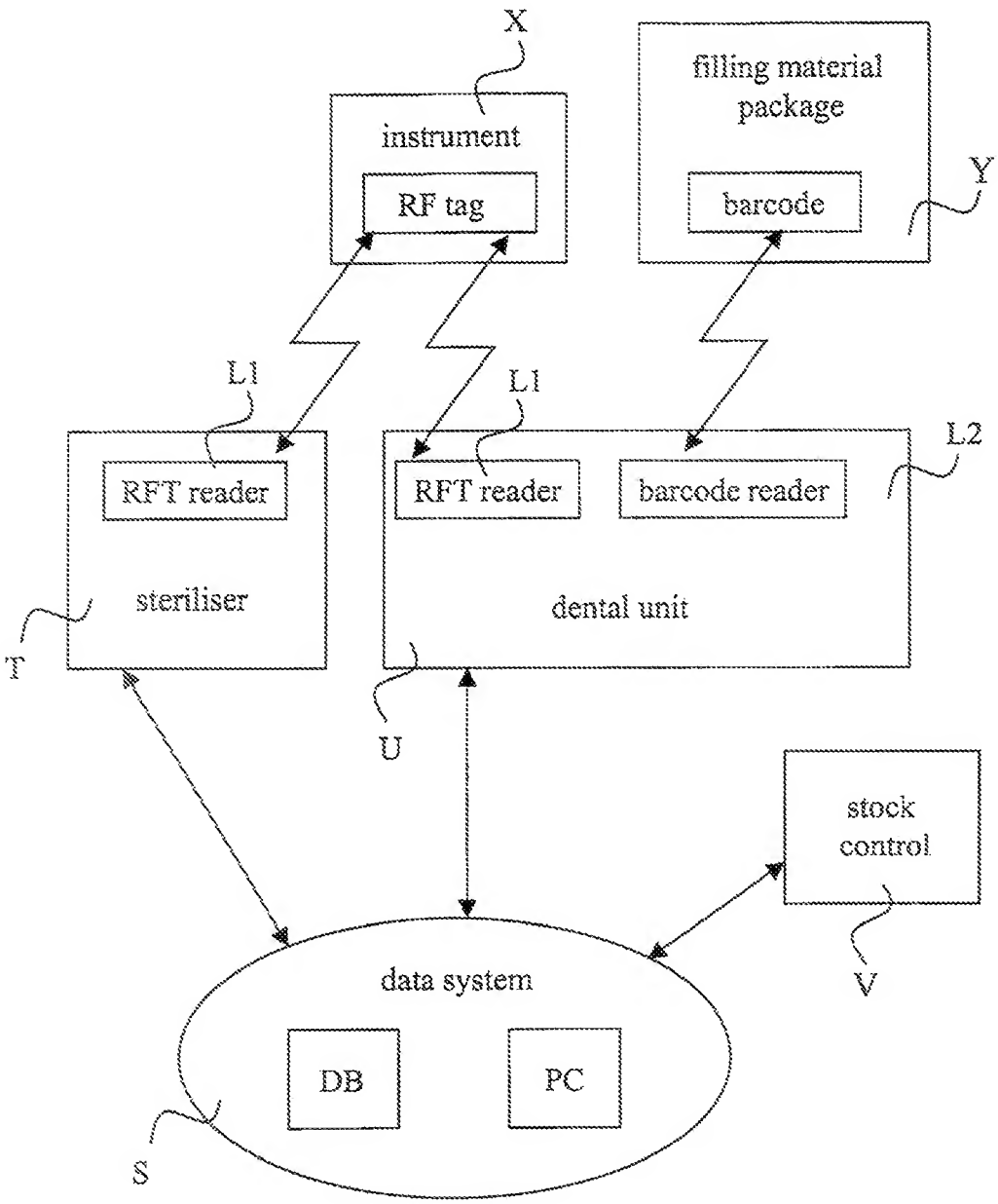
X
instrument
RF tag
filling material package
barcode
Y
L1
L1
L2
RFT reader
RFT reader
barcode reader
steriliser
dental unit
T
U
stock control
V
data system
DB
PC
S

Figure 1

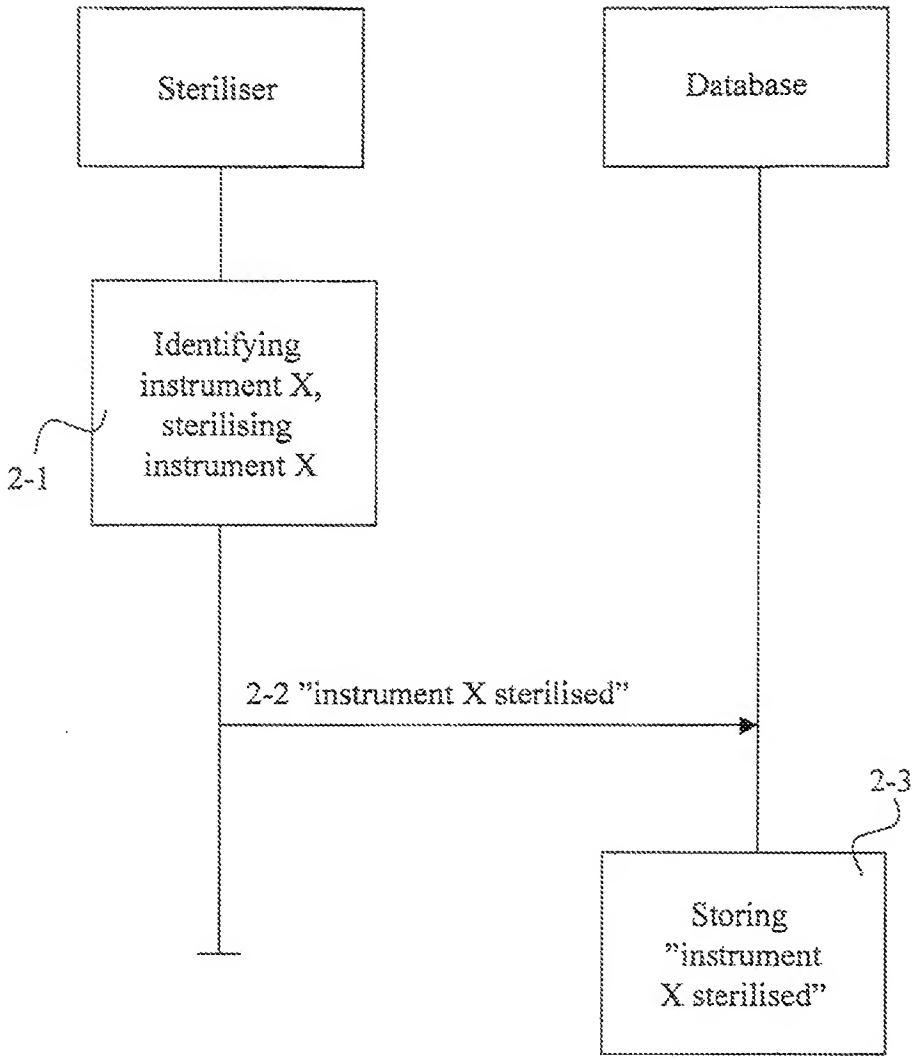
Steriliser
Database
Identifying instrument X, sterilising instrument X
2-1
2-2 "instrument X sterilised"
2-3
Storing "instrument X sterilised"

Figure 2

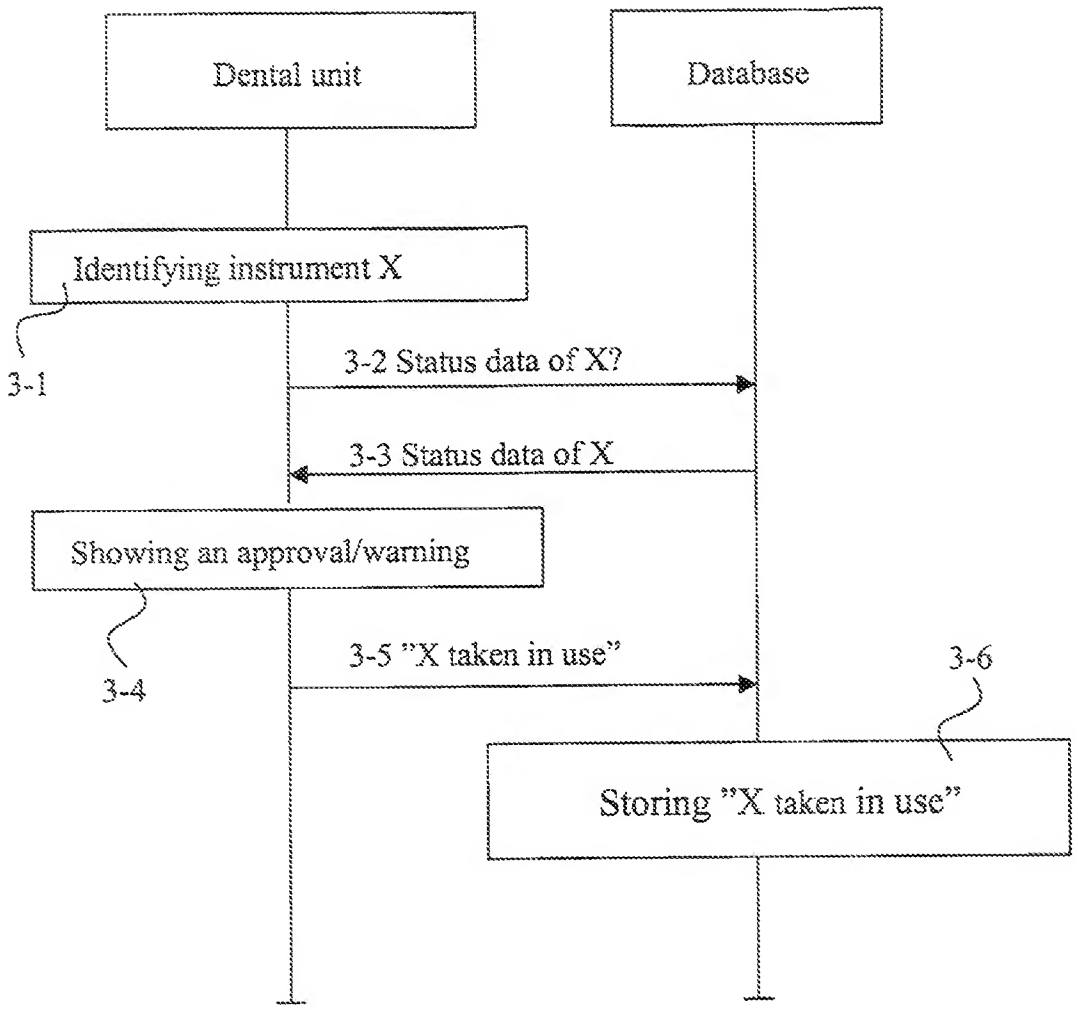
Dental unit
Database
Identifying instrument X
3-1
3-2 Status data of X?
3-3 Status data of X
Showing an approval/warning
3-4
3-5 "X taken in use"
3-6
Storing "X taken in use"

Figure 3

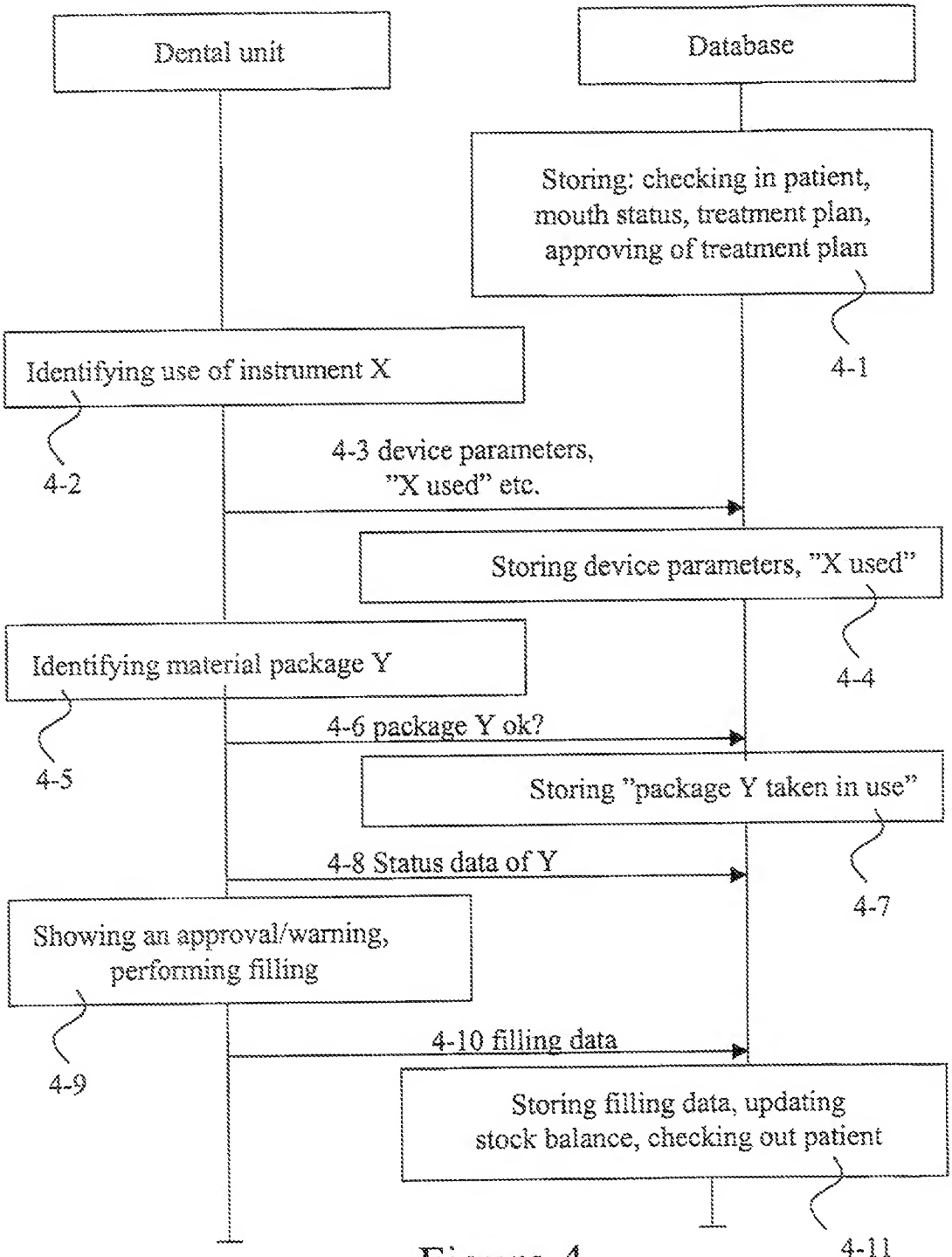
Dental unit
Database
Storing: checking in patient, mouth status, treatment plan, approving of treatment plan
4-1
Identifying use of instrument X
4-2
4-3 device parameters, "X used" etc.
Storing device parameters, "X used"
4-4
Identifying material package Y
4-5
4-6 package Y ok?
Storing "package Y taken in use"
4-7
4-8 Status data of Y
Showing an approval/warning, performing filling
4-9
4-10 filling data
Storing filling data, updating stock balance, checking out patient
4-11

Figure 4

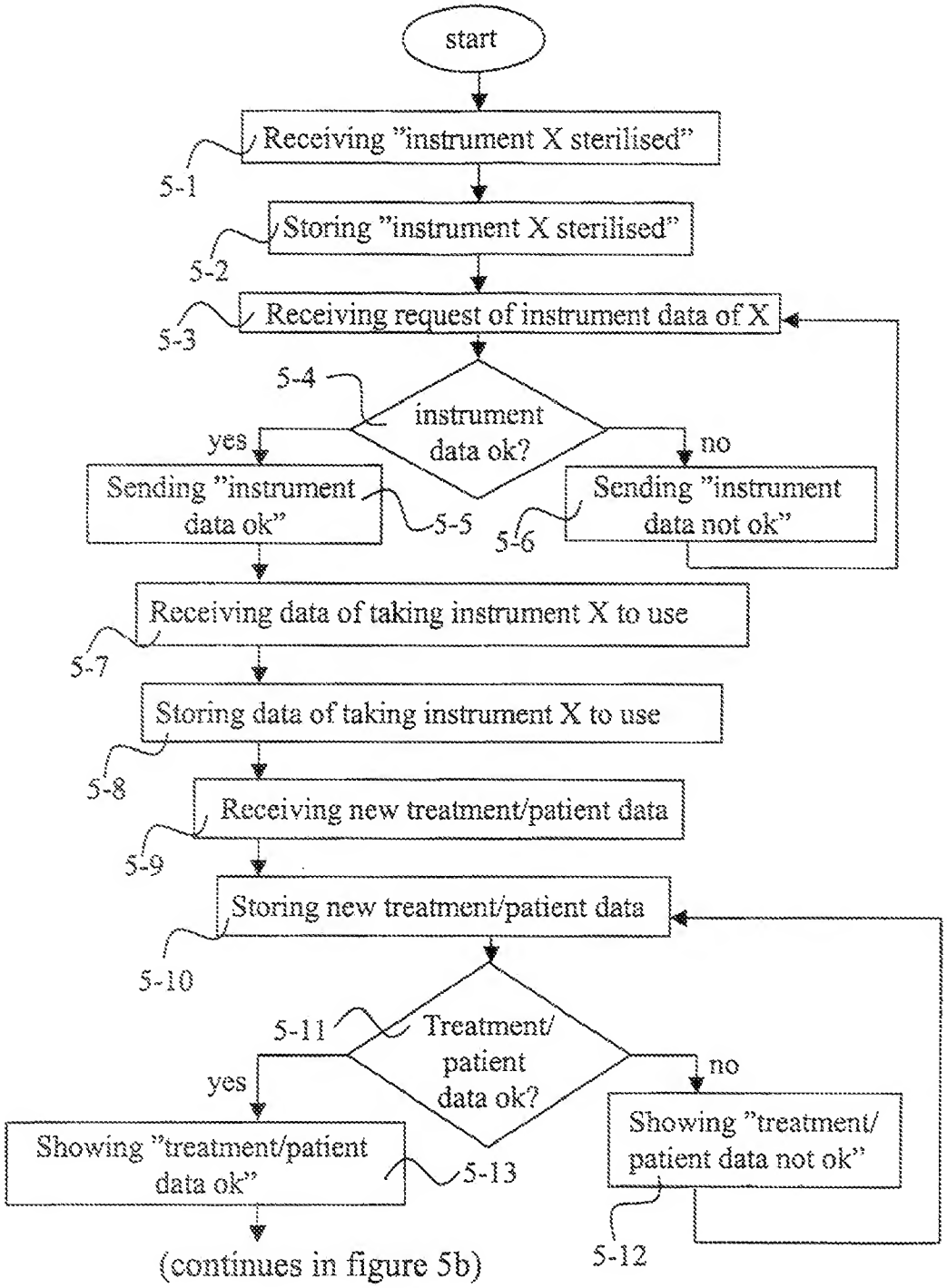
start
Receiving "instrument X sterilised"
5-1
Storing "instrument X sterilised"
5-2
Receiving request of instrument data of X
5-3
5-4
instrument data ok?
yes
no
Sending "instrument data ok"
5-5
Sending "instrument data not ok"
5-6
Receiving data of taking instrument X to use
5-7
Storing data of taking instrument X to use
5-8
Receiving new treatment/patient data
5-9
Storing new treatment/patient data
5-10
5-11
Treatment/ patient data ok?
yes
no
Showing "treatment/patient data ok"
5-13
Showing "treatment/ patient data not ok"
5-12
(continues in figure 5b)

Figure 5a

(continues from figure 5a)

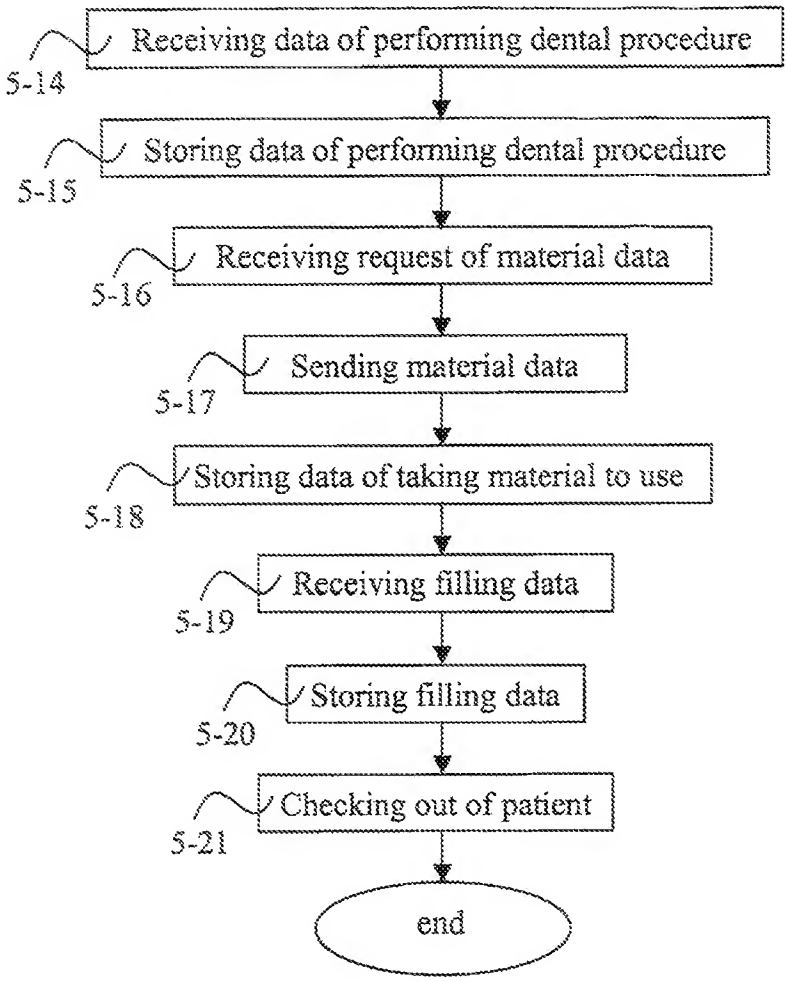

Figure 5b

Order of procedures	Hygienist	Dentist	Steriliser	Data system	Dental unit	Stock control
	Instrument X to steriliser					
			Identification of instrument X			
			Sterilisation operation			
			Message to data system "X sterilised"			
				Entering data "X sterilised at the point of time T0" in database		
	Instrument X to storage					
	Instrument X to dental unit					
					Identification of instrument X	
					Reading history of instrument X	
					Possible warning of being unsterilised	
					Message to data system "Instrument X taken in use"	
				Entering "Instrument X taken in use at the point of time T1" in database		
		Checking in of patient P				
				Entering data "Treatment of patient P started at the point of time T2" in database		
		Surveys and registers mouth status				
				Entering updated mouth status in database		
		Draws up and registers treatment plan				
				Entering treatment plan in database		
		Informs patient and receives approval of plan				
				Entering data of informing patient and treatment plan in database		
		Removes caries				
					Identifies use of instrument X	
					Message to data system "Patient P was treated by instrument X"	
				Entering data "Patient P was treated by instrument X" in data system		

Figure 6a

Order of procedures	Hygienist	Dentist	Steriliser	Data system	Dental unit	Stock control
	Fetching material package Y					
					Identifying package Y	
					Message to data system "Package Y taken to use"	
					Reading data of package Y from data system	
					Possible warning of out-of-date material	
					Possible automatic setting of instrument parameters	
		Uses light-curing instrument				
					Message to data system "Package Y used"	
				Entering "Tooth H of patient P filled with material from package Y" in database		
				Message to stock control "Material Y used"		
						Updating stock balance
						Possible automatic order
		Enters treatment performed and signs entries digitally				
				Entering data of treatment event and its signature in database		
		Checking out of patient P				
				Entering data "Treatment of patient P ended at the point of time T3" in database		

Figure 6b